

Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1-56 are pending in the application, with claims 1, 28, 51, and 56 being the independent claims. Claims 1, 6-8, 10, 16-18, 28, 39-41 and 56 are sought to be amended. Claims 51-55 are sought to be cancelled without prejudice to or disclaimer of the subject matter recited therein. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendment and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Amendment to the Specification

A minor amendment has been made to the specification to clarify the priority claim made therein. This changes are believed to introduce no new matter, and its entry is respectfully requested.

Allowed Claims

Applicants gratefully acknowledge the Examiner's allowance of claims 1-27. Applicants have amended claims 1, 17 and 18 to fully set forth the text corresponding to certain acronyms recited therein, have amended claims 6-8 and 10 to rectify errors

related to claim dependency included therein, and have amended claim 16 to rectify an error relating to a claim term recited therein. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Rejections under 35 U.S.C. § 112

The Examiner has rejected claim 56 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. In particular, the Examiner rejected claim 56 for including first and second limitations that both recite "sampling the data representative signal." By the foregoing amendment, Applicants have removed the first sampling step from claim 56. Accordingly, Applicants respectfully request that this rejection be reconsidered and withdrawn.

Rejections under 35 U.S.C. § 103

The Examiner has rejected claim 28 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,553,064 to Paff *et al.* ("Paff") in view of U.S. Patent No. 5,612,975 to Becker *et al.* ("Becker"). Based on Applicants' amendment to claim 28 and the following remarks, Applicants respectfully traverse.

Claim 28, as presently amended, recites a "receiver that receives a signal transmitted through a cable transmission system" that includes:

- an analog to digital converter;
- a matched filter coupled to the analog to digital converter; and,

a closed loop resampler coupled to the matched filter, wherein the matched filter is coupled between the analog to digital converter and said closed loop resampler.

The combination of Paff and Becker fails to teach or suggest each of the foregoing features. For example, neither Paff nor Becker teaches or suggests a receiver having a matched filter "coupled between" an analog to digital converter and a closed loop resampler as recited in claim 28. The Examiner has already acknowledged that Paff does not teach a closed loop resampler coupled to a matched filter in any configuration. *See Office Action, at ¶ 2 (stating that "Paff differs from the claimed invention in that Paff does not teach the claimed closed loop resampler coupled to the matched filter.").* In Becker, an analog-to-digital converter 46 and a resampler 57 precede a matched filter 56 in the receiver architecture described therein. *See Becker, col. 5, ll. 7-9, col. 6, ll. 64-66, FIG. 2.* The output of the analog-to-digital converter 46 is received by resampler 57, and the output of resampler 57 is received by matched filter 56. Thus, in Becker, the matched filter 56 is not "coupled between" the analog-to-digital converter 46 and resampler 57. In fact, the structure disclosed in Becker is representative of the prior art as discussed in the present application:

In the prior art, clock frequency recovery and clock phase recovery stages are combined into a single stage and the Nyquist filters are disposed *after* this single stage.

See specification at p. 52, lines 18-20 (emphasis added).

Since neither Paff nor Becker, alone or in combination, teach or suggest each and every feature of claim 28, the combination of Paff and Becker fail to support a *prima facie* obviousness rejection of independent claim 28. Accordingly, the Examiner's

rejection of claim 28 under 35 U.S.C. § 103(a) is traversed and Applicants respectfully request that the rejection be reconsidered and withdrawn.

The Examiner has rejected claim 29 under 35 U.S.C. § 103(a) as being unpatentable over Paff in view of Becker and further in view of U.S. Patent No. 5,276,706 to Critchlow ("Critchlow"). Like Paff and Becker, Critchlow does not teach or suggest a receiver having a matched filter "coupled between" an analog to digital converter and a closed loop resampler. Thus, claim 29 is not rendered obvious by this combination for at least the same reasons as independent claim 28 from which it depends and further in view of its own respective features. Accordingly, the Examiner's rejection of claim 29 under 35 U.S.C. § 103(a) is likewise traversed and Applicants respectfully request that the rejection be reconsidered and withdrawn.

The Examiner has objected to claims 30-50 as being dependent upon rejected base claims 28 and 29. For the reasons set forth above, the rejections of claims 28 and 29 have been traversed. Accordingly, Applicants respectfully request that the objection to claims 30-50 be reconsidered and withdrawn.

The Examiner has rejected claims 51-55 under 35 U.S.C. § 103(a) as being unpatentable over Paff in view of U.S. Patent No. 5,859,671 to Kim. By the foregoing amendment, claims 51-55 have been cancelled without prejudice to or disclaimer of the subject matter recited therein, thereby rendering this rejection moot. Accordingly, Applicants respectfully request that the rejection to claims 51-55 be reconsidered and withdrawn.

The Examiner has rejected claim 56 under 35 U.S.C. § 103(a) as being unpatentable over Paff in view of U.S. Patent No. 5,903,231 to Emelko ("Emelko").

Based on Applicants' amendment to claim 56 and the following remarks, Applicants respectfully traverse.

Claim 56, as presently amended, recites a "method for recovering data symbols transmitted over a cable system" that includes:

converting a transmitted data representative analog signal into a data representative digital signal;

filtering the data representative digital signal with a matched filter to generate a filtered data representative digital signal;

sampling the filtered data representative digital signal with a closed loop resampler to generate a sampled data representative digital signal; and

converting the sampled data representative digital signal into one of a plurality of voltage levels.

The combination of Paff and Emelko fails to teach or suggest each of the foregoing features. For example, neither Paff nor Emelko teaches or suggests recovering data symbols by performing sequential matched filtering and closed loop resampling steps as recited in claim 56. As noted by the Examiner, Paff does not teach the combination of a matched filter and a closed loop resampler. *See Office Action, at ¶ 2* (stating that "Paff differs from the claimed invention in that Paff does not teach the claimed closed loop resampler coupled to the matched filter."). Emelko, which relates to encoders, does not describe either matched filtering or closed loop resampling.

Since neither Paff nor Emelko, alone or in combination, teach or suggest each and every feature of claim 56, the combination of Paff and Emelko fail to support a *prima facie* obviousness rejection of independent claim 56. Accordingly, the Examiner's rejection of claim 56 under 35 U.S.C. § 103(a) is traversed and Applicants respectfully request that the rejection be reconsidered and withdrawn.

Other Matters

Applicants note that a Second Supplemental Information Disclosure Statement (IDS) was properly filed in the present application on April 30, 2004, prior to the issuance of the first Office Action on May 6, 2004. However, the Examiner has not indicated his consideration of the documents provided with the Second Supplemental IDS. These documents consisted of a copy of the Declaration of Lisa V. Denney, executed March 22, 2004 with accompanying Exhibits 1-4. Applicants respectfully request that the Examiner provide Applicants with a paper that indicates that these documents have been considered.

Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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